

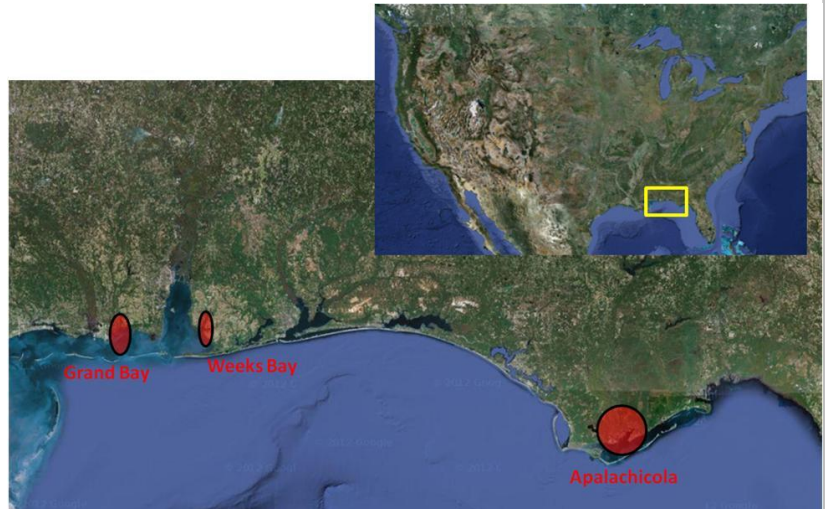
## NOAA SENTINEL SITE PROGRAM

### Northern Gulf of Mexico Sentinel Site Cooperative

Website:

<http://oceanservice.noaa.gov/sentinelsites/welcome.html>

**NOAA Sentinel Site Program:** The NOAA Sentinel Site Program (SSP) utilizes existing assets, programs, and resources in a place-based, issue-driven approach to ask and answer questions of local, regional, and national significance that affect both NOAA Trust Resources and the surrounding communities.



### Abstract

This cooperative incorporates the coastline and barrier islands from the Suwannee River in the Florida panhandle west to the Pearl River, at the state line between Mississippi and Louisiana. The area includes the Apalachicola, Weeks Bay, and Grand Bay National Estuarine Research Reserves as well as several National Wildlife Refuges and National Parks. This region, with low level topography and extensive marsh and other critical habitats, is highly susceptible to the effects of sea level change (SLC). The combined effects of sea level rise and tropical storms can have dramatic impacts on coastal communities and ecosystems, including more flooding, faster erosion, land loss, and saltwater intrusion into freshwater resources. Impacts can also reach offshore to valuable resources like oyster reefs and seagrass beds. Considerable ongoing monitoring and research activities, particularly within three NERRs sites, provide the baseline information and parameters required for an integrative ecosystem approach to addressing SLC. Building off of an NCCOS-funded project, this Cooperative would leverage the combined capabilities of three NERRs, NOS, the Gulf of Mexico Alliance and the NOAA Gulf Regional Collaboration Team to assess the impacts of SLC and develop capabilities and tools to facilitate conservation of coastal resources by local, state, and regional managers. Key products will include coupled models of hydrodynamics, sedimentation, salinity, and vegetation dynamics as well as classified maps that delineate high and low risk areas. These tools and products are envisioned to allow for assessments of risk and planning, coastal construction guidelines, resource protection and sustainability needs, and set back guidance.

### Available Assets

- Suite of surface elevation tables in marsh habitats, in coordination with NGS, GOMA, and NCCOS at three NERRs. Additional ongoing monitoring and research activities on a suite of biological (e.g. oyster and marsh productivity) and physical parameters (e.g. sediment transport and circulation).
- Land cover data sets for the entire Cooperative region derived from 30-m resolution Landsat Thematic Mapper and Landsat Enhanced Thematic Mapper satellite.
- In association with the Northwest Florida Water Management District and FEMA, complete LiDAR coverage of the Cooperative region and recent flood plain mapping.



- Suite of modeling platforms, including ADCIRC-2DDI, POM 3D, SWAN, WASH123D, and MEMII that will be coupled allowing for delineation of new tidal boundaries, marsh erosion estimates, and habitat land cover changes, for example.
- Ongoing NCCOS-funded study, led by the University of Central Florida, on the Ecological Effects of Sea Level Rise in the region that will provide integrative capabilities and lead the development of tools and products to assess and predict impacts of sea level rise.
- Engaged local, state, and federal stakeholders, with an established management advisory committee, that includes resource managers and coastal planners.
- Capabilities for the dissemination of the information, products, and capabilities through partnerships that include the Coastal Training Program, CSC's Sea Level Rise Viewer, and GOMA.

### **Internal and External Partners Currently Involved**

- NOAA National Centers for Coastal and Ocean Science (NCCOS)
- National Geodetic Survey (NGS)
- Coastal Services Center (CSC)
- Center for Operational Products and Services (CO-OPS)
- National Estuarine Research Reserves (NERRs; Apalachicola, Grand Bay, and Weeks Bay)
- NOAA Gulf Regional Collaboration Team
- Sea Grant (Mississippi-Alabama, Florida)
- Mobile Bay National Estuary Program (NEP)
- Gulf of Mexico Alliance
- Northwest Florida Water Management District
- County planners (Wakulla, Escambia, Bay)
- Academia (University of Central Florida, University of Florida, Florida State University, University of South Carolina)

### **Management Goals Addressed**

The proposed Cooperative addresses several regional and national management goals. The Gulf Alliance Habitat Conservation and Restoration Priority Issue Team (PIT) has several long-term goals relevant to sea level change in this region, including improved conservation and restoration management tools, as does the Coastal Community Resiliency PIT. This Cooperative will also address needs outlined in the Surface Water Improvement and Management plan of the Northwest Florida Water Management District as well as management plans of the numerous protected areas in the region (e.g. NERRs, NWR, Aquatic Preserves). A Management Committee associated with the NCCOS project, will provide guidance and direction for tool and product development to best address these and other management plans and efforts.

### **Point of Contact**

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